The MSc programme in Civil and Architectural Engineering provides you with insight into advanced theoretical and practical aspects of topics in civil and architectural engineering, as well as the opportunity to specialise in a related field.

The programme is taught by faculty members who are active researchers, so students benefit from a research-intensive environment. You will have the chance to work with researchers and complete a project in collaboration with a private company.

**SPECIALISE AS YOU CHOOSE**

Year one of the MSc consists of one compulsory study package and two specialised study packages. All students take the compulsory study package, but you can choose your own two specialised study packages from the options listed on the next page. Year two consists of an elective programme and a Master's thesis, the topic of which is decided upon consultation with professors.

Your elective programme is chosen by you. You may choose from a number of specialised courses within civil and architectural engineering, including advanced finite element analysis of structures, bridge design, structural mechanics of wind turbines, or pre-stressed concrete structures. As part of the elective programme, you may also choose to do a research project or study abroad for a semester.

The MSc programme offers specialised study packages in the following fields: structural analysis and concrete structures, structural dynamics and monitoring, geotechnical engineering, construction management, tectonic design, indoor climate and energy, (day)lighting design, fluid dynamics, and building ventilation.

**STUDENT LIFE**

At Aarhus University you will be part of an extensive engineering environment with more than 3,000 engineering students. So you will have ample opportunity to get involved in both academic and social student associations with your fellow students.

**CAREERS**

The varied forms of teaching, group collaboration, and close scientific dialogue with researchers, as well as the department’s strong relationship with the industrial sector, give our graduates competencies that are in great demand on the global job market, including abstract, critical and independent thinking, analytical skills, and strategic planning. You can use these skills in many contexts – even in jobs you didn’t know you were qualified for.

Previous graduates of the MSc in Civil and Architectural Engineering have found jobs with consulting engineering firms, contractors, property developers, architecture firms, or in the building component industry. Graduates typically work in roles that involve developing and designing advanced building constructions, advanced energy technology solutions and industrialised building components – frequently in interdisciplinary collaboration with architects and designers.

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**MSC IN CIVIL AND ARCHITECTURAL ENGINEERING**

**COMBINING DEEP KNOWLEDGE WITH PRACTICE**

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The computing power is now so strong that it can design building constructions with such a degree of perfection that architects and engineers almost have to give up. In my Master’s thesis I got the idea of developing an algorithm for advanced grid-scale constructions. This makes it possible to improve design quality while simultaneously significantly reducing materials consumption.

**LASSE RAHBEK**

PhD student, Civil and Architectural Engineering programme

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Photo: Martin Gravgaard
# MSC IN CIVIL AND ARCHITECTURAL ENGINEERING*

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## COMPULSORY COURSES

### AUTUMN
- Numerical Analysis in Civil Engineering 5 ECTS
- Risk and Reliability in Engineering 5 ECTS
- Experimental Mechanics Theory* or Integrated Energy Design* or Advanced Planning and Scheduling of Construction Projects* 5 ECTS

* Compulsory courses may differ depending on the chosen specialisation. Find out more at: masters.au.dk/civil-and-architectural-engineering

### SPRING
- Innovation and Entrepreneurship 5 ECTS
- Research Methods in Civil and Architectural Engineering 5 ECTS
- Structural Concepts* or Heat Transfer and Mass Transport* 5 ECTS

## SPECIALISED STUDY PACKAGES

### AUTUMN
- Construction Management
  - Innovative Construction Processes 10 ECTS
  - Lean, Lean Construction & Lean Design 5 ECTS
- (Day) Lighting Design
  - Daylighting Design and Lighting Simulation 10 ECTS
  - Electric Lighting Design 5 ECTS
- Fluid Dynamics and Building Ventilation
  - Air Physics in Building Ventilation 5 ECTS
  - CFD in Architectural Engineering 5 ECTS
  - Natural Ventilation 5 ECTS
- Geotechnical Engineering
  - Experimental Geotechnics 10 ECTS
  - Numerical Analysis in Geotechnical Engineering 5 ECTS
- Structural Dynamics and Monitoring
  - Bridge Design 5 ECTS
  - Structural Dynamics 10 ECTS

### SPRING
- Indoor Climate and Energy
  - Energy-Efficient Building Envelope Design 5 ECTS
  - Indoor Climate 5 ECTS
  - Simulation of Building Energy Systems 5 ECTS
- Structural Analysis and Concrete Structures
  - Design of Steel Structures 5 ECTS
  - Limit Analysis and Design of Concrete Structures 10 ECTS
- Computational Methods in Civil Engineering
  - Finite-element Analysis of Solids and Structures 10 ECTS
  - Numerical Analysis of Vibrations and Wave Propagation in Solids and Structures 5 ECTS

* Compulsory courses may differ depending on the chosen specialisation. Find out more at: masters.au.dk/civil-and-architectural-engineering

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**ELECTIVE COURSES**

Choose courses from the specialised study packages or other courses at the Department of Engineering and the broader Faculty of Science, subject to approval by the Head of Degree Programme.

AU Course Catalogue: kursuskatalog.au.dk/en/